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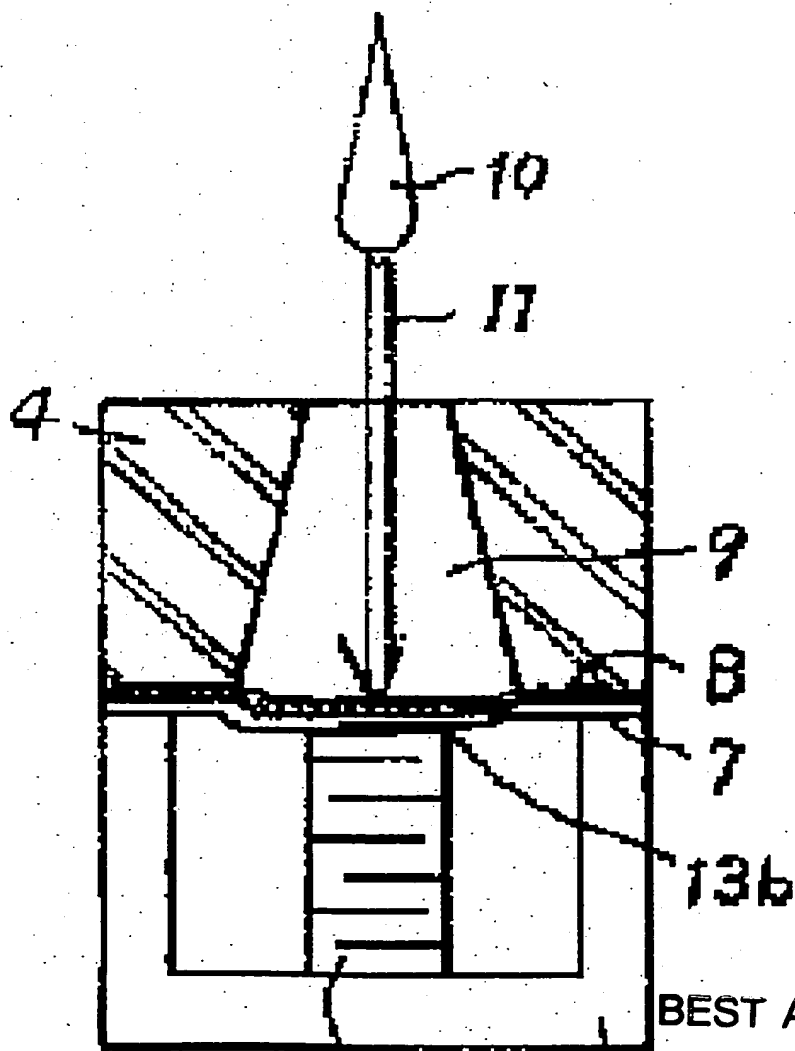
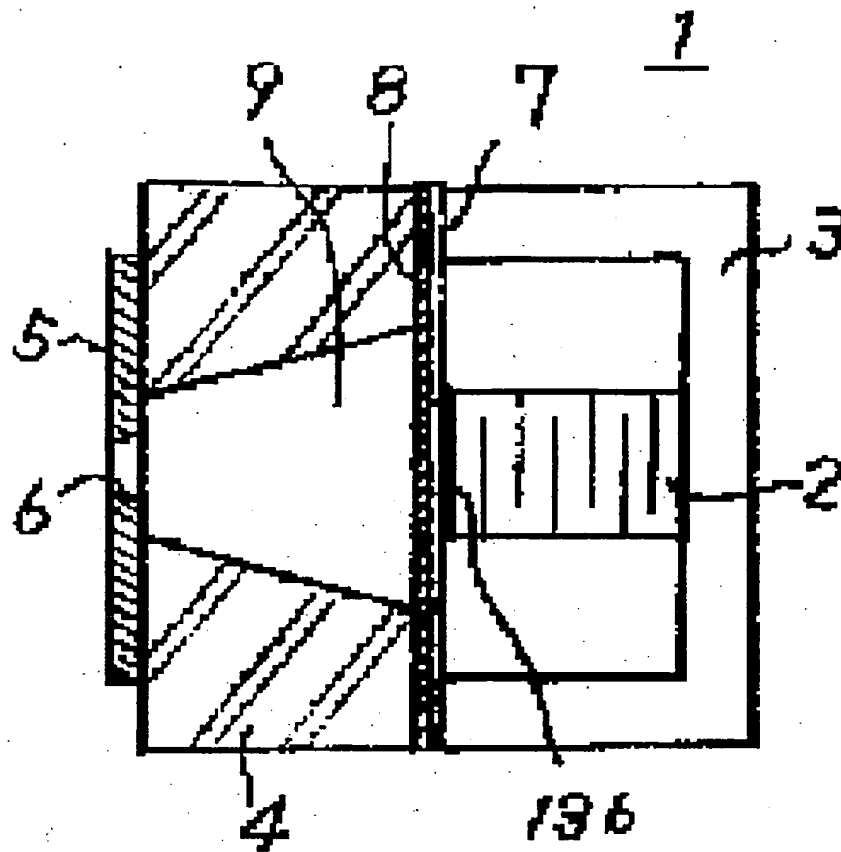
WATANABE KEIJI

PA : HITACHI KOKI CO LTD

TI : INK JET PRINTER HEAD AND METHOD OF MANUFACTURING THE SAME

AB : PROBLEM TO BE SOLVED: To avoid the risk of a bonded portion peeling due to heat deterioration, by using a low temperature melting solder to bond a diaphragm to an end of a piezoelectric element, the other end of which is fixed to a housing of an ink jet printer head.
SOLUTION: When a laser beam source 10 above a body 4 irradiates laser beams 11, a diaphragm 8 converts energy of the laser beams into heat to generate heat to undergo elongation. Then heat conduction melts a solder layer 13a at an end of a piezoelectric element 2.
Subsequently, upon stopping of irradiation the solder layer 13a provides a low temperature melt soldering bonding between the diaphragm 8 and the piezoelectric element 2 to become a solder layer 13b. Since duration of irradiation is 5 seconds or less and the piezoelectric element has a small heat conductivity as compared with those of the diaphragm and the solder, that portion of the piezoelectric element, which exceeds Curie temperature, can be limited to a surface portion until molten solder permeates between the diaphragm and the piezoelectric element and the bonding is completed due to temperature decrease. Further, there is no need of fearing heat deterioration of the piezoelectric element provided that solder is selected depending upon Curie temperature of the piezoelectric element.

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